UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,435	04/10/2001	Martin Morris	WTDC-010/00US	3805

	7590	09/20/2004

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EXAMINER
MUNOZ, GUILLERMO

ART UNIT	PAPER NUMBER
2637	

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/832,435	MORRIS, MARTIN
	Examiner	Art Unit
	Guillermo Munoz	2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *10 April 2001*.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-24* is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-24* is/are rejected.
7) ☒ Claim(s) *4,7,18 and 20-24* is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. _____.
    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the length exceeds 150 words.

Correction is required. See MPEP § 608.01(b).

Claim Objections

Claims 4, 7, 18, and 20-24 are objected to because of the following informalities:

The phrase "claim 4" in line 1 appears to be a typographical error. Examiner suggest

replacing the phrase "claim 4" with the phrase —claim 3—.

Regarding claim 20, the variable "N" is critical or essential to the practice of the

invention, but not defined in the claim.

Regarding claim 21, see claim 20.

Regarding claim 22, see claim 20.

Regarding claim 23, see claim 20.

Regarding claim 24, see claim 20.

Appropriate correction is required.

Claim 7 in lines 1-2 and lines 3-4, it is suggested that the phrase "said first phase

synchronizer" be replaced with the phrase —said first of said phase synchronizers—.

Additionally, it is suggested that the phrase "said predetermined threshold" be replaced with the

phrase —said predefined threshold—.

Claim 18 in line 1, it is suggested that the phrase "system" be replaced with the phrase —

module—.

Claim 22 in lines 1-2, it is suggested that the phrase "said first of said N codeword

synchronization modules" be replaced with the phrase —said first of said set of N codeword

synchronization modules—.

Claim 24 in line 3, "." Should be inserted to form a sentence.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6 and 8-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Aikawa et al. in view of Tamamura et al..

Regarding claim 1; Aikawa et al. teach a syndrome calculation circuit which can detect

the conditions of synchronization, note figure 1. Aikawa et al. teach adjusting the phase of the

syndrome calculation circuit and generating a new syndrome signal if synchronization is not

achieved or is lost. Aikawa et al. teach the use of a shift register in the syndrome calculation

circuitry, note Fig. 4. Aikawa et al. teach the error detection module for judging that

synchronization has been lost, note Col. 3, lines 1-5, however, Aikawa et al. does not particularly

call for implementing syndrome modules for each phase of the synchronization pattern.

Tamamura et al. teach a synchronization device for absolute phase detection in an

expeditious manner. Tamamura et al. teach synchronization detection is made based on the

synchronizing signal under a condition that the actual number of bit errors is less than or equal to

the tolerable number m1, note Col. 7, lines 40-45. Tamamura et al. teach the use of a separate

detection circuit for each potential phase of the sync pattern, note Fig. 12 elements S21-1...S21-

n.

Therefore, it would have been obvious to one having ordinary skill in the art at the time

of the invention to implement Aikawa et al.'s word synchronizaton circuitry with Tamamura et

al.'s teaching of parallel detection circuitry for each potential phase of a synchronization pattern,

since Tamamura et al. suggest that such a modification would improve the time required to

achieve synchronization in Col. 9, lines 62-64.

Regarding claim 2; Aikawa et al. further teach the claimed subject matter in Col.6, lines

56-62.

Regarding claim 3; as applied to claim 1, Aikawa et al. do not explicitly teach generating

a codeword valid signal, however, the functionality of the word synchronization pulse is the

same, note Fig. 6, signal S.

Regarding claim 4, see claim 2.

Regarding claim 5, Aikawa et al. do not explicitly state "syndrome computing module is reset", however, the functionality of resetting the testing counter is the same, note Col.5, lines 20-25.

Regarding claim 6, Tamamura et al. teach claimed subject matter, note figure 9.

Regarding claim 7, Tamamura et al. further teach the claimed subject matter, note element S23 of figure 12.

Regarding claim 8, see claim 2.

Regarding claim 9, see claim 1.

Regarding claim 10, see claim 2.

Regarding claim 11, see claim 1.

Regarding claim 12, see claim 2.

Regarding claim 13, see claim 3.

Regarding claim 14, see claim 2.

Regarding claim 15, Aikawa et al. further teach the claimed subject matter by the computation of m syndromes for each potential phase, see Col.5, lines 1-2.

Regarding claim 16, see claim 2.

Regarding claim 17; as applied to claim 15, Aikawa et al. do not explicitly state comparator, however a comparison process is inherent to the operation of determining the syndrome becomes zero for the entire sequence of M times.

Regarding claim 18, see claim 2.

Regarding claim 19, see claim 2.

Regarding claim 20, see claim 1.

Regarding claim 21, see claim 1.

Regarding claim 22, see claim 2.

Regarding claim 23, Tamamura et al. do not explicitly teach a sampling circuit and associated clock, however, the claimed subject matter is inherent to the operation of the Digital Demodulator Unit 12 of figure 10. The operation of the clock circuit at a frequency of N times the received data bit is a matter of design choice and there is not criticality in the particular frequency.

Regarding claim 24, Tamamura et al. do not explicitly teach a demultiplexer, however, the claimed subject matter is inferred by the interconnecting junction found before elements S21-1, S21-2, and S21-n.
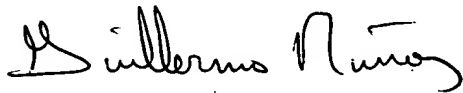
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Munoz whose telephone number is 571-272-3045. The examiner can normally be reached on Monday-Friday 8:30a.m-4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GM
September 15, 2004

JEAN B. CORRIELUS
PRIMARY EXAMINER

9/17/04